Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Digital Audio Broadcasting Systems and	)	MM Docket No. 99-325
Their Impact on the Terrestrial Broadcast	)	
Service	)	
	)	

REPLY COMMENTS OF THE CONSUMER ELECTRONICS ASSOCIATION

The Consumer Electronics Association ("CEA"),[1] pursuant to Section 1.415 of the Commission's Rules,[2] respectfully submits these reply comments in response to the Commission's *Public Notice* seeking comment on the National Radio Systems Committee ("NRSC") DAB Subcommittee's *Evaluation of the iBiquity Digital Corporation IBOC System, Part 2 – AM IBOC* ("NRSC AM IBOC Report").[3]

[1] CEA is the principal trade association of the consumer electronics industry. CEA members design, manufacture, distribute, and sell a wide variety of consumer electronics and information technology equipment.

[2] *See* 47 CFR § 1.415 (2001).

[3] *See Comment Sought on National Radio Systems Committee DAB Subcommittee's "Evaluation of the iBiquity Digital Corporation IBOC System,"* Public Notice, DA 02-899, MM Docket No. 99-325 (rel. Apr. 19, 2002). The NRSC is an industry-wide standards-setting body for technical aspects of terrestrial over-the-air radio broadcasting systems in the U.S. CEA and the National Association of Broadcasters ("NAB") are the co-sponsors of the NRSC.

I. INTRODUCTION

The NRSC's evaluation of iBiquity Digital Corporation's AM IBOC system found that

> iBiquity has developed an attractive solution to improve AM listening based on the best of today's available technology. Considering what it has learned during these tests, the NRSC recommends that the iBiquity AM IBOC system as tested by the NRSC should be authorized by the FCC as an enhancement to AM broadcasting in the US as a daytime-only service.[4]

CEA concurs with the conclusions in the NRSC AM IBOC Report and the comments in favor of adopting AM IBOC DAB.[5] Further, CEA urges the Commission to swiftly adopt a single technical standard for AM IBOC technology. By doing so, the Commission will enable receiver manufacturers, broadcasters, and the general public to enjoy the benefits of improved radio service in the AM band.[6] To further facilitate the transition to AM IBOC DAB, CEA urges the Commission to ensure the prompt correction of any limited interference that might occur when AM IBOC DAB is introduced.

CEA also takes this opportunity to address the criticisms and concerns expressed in the initial comments regarding consumer electronics equipment. CEA believes that the concerns expressed regarding the backward compatibility of AM IBOC DAB receiver equipment and forced obsolescence of existing analog equipment are largely premature due to the dual nature of

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[4] *See National Radio Systems Committee DAB Subcommittee Evaluation of the iBiquity Digital Corporation IBOC System – Part 2 – AM IBOC,* MM Docket No. 99-325 at 9 (filed Apr. 16, 2002) ("NRSC AM IBOC Report").

[5] *See, e.g.,* Comments of Clear Channel Communications, Inc. at 2; Cox Radio at 1; Greater Media, Inc. at 5; Harris Corp. at 1; iBiquity Digital Corp. at 5, 11-12; Infinity Broadcasting Corp. at 2, 8; Journal Broadcast Corp. at 2; Nautel at 2; NPR at 3-5; NAB at 1; Susquehanna Radio Co. at 4.

[6] Journal Broadcast Corp. notes in its comments at 2 that "[i]mmediate endorsement will encourage receiver manufacturers to include AM IBOC in their first generation receivers." Greater Media, Inc. notes in its comments at 4 that "receiver manufacturers, key to the success of any new radio service, need the assurance that the consumers who purchase their new IBOC receivers will have digital program material to listen to."

IBOC DAB transmissions. Further, the consumer electronics industry has been and remains committed to developing and manufacturing equipment that consumers demand.

II. A SINGLE AM IBOC DAB STANDARD SHOULD BE ADOPTED

For AM IBOC DAB technology to be as successful and ubiquitous as analog AM, the Commission must adopt a single AM IBOC DAB standard.[7] It is important to note that the NRSC AM IBOC Report is not an AM IBOC DAB standard—it is a report on the performance of iBiquity Digital Corporation's AM IBOC DAB system. As such, the Commission must specify the technical parameters of the AM IBOC DAB signal so receiver manufacturers have confidence that the equipment they build will be ubiquitously deployed.[8]

In addition to manufacturers, broadcasters and consumers need the certainty that an FCC-mandated standard provides in order to have sufficient confidence in the long-term usefulness of IBOC DAB equipment to make the necessary investments. Without a standard, consumers may be wary of purchasing digital radio equipment based on fear that the equipment they purchase will not have long-term usefulness. Further, broadcasters may be reluctant to produce digital AM programming absent an established standard. Failure to implement a single standard may jeopardize the successful implementation of AM IBOC DAB.

CEA's extensive experience in open technical standards setting could be utilized to help the industry finalize an appropriate IBOC DAB standard. As such, CEA and the NRSC offer the

[7] WGUL-FM, Inc. notes that " [a]doption of an IBOC digital standard may be the last opportunity to afford any relief to the beleaguered broadcasters who still have faith in AM stations as a music source." *See* Comments of WGUL-FM, Inc. at 2.

[8] CEA discussed the need for a single IBOC DAB standard at length in its comments in the FM IBOC DAB proceeding. *See* Reply Comments of CEA, *In the Matter of Digital Audio Broadcasting Systems and Their Impact on the Terrestrial Radio Broadcast Service*, MM Docket No. 99-325 at 2-4 (filed Mar. 21, 2002).

Commission whatever assistance it may request toward the development of a single AM IBOC DAB standard.

III. AM IBOC DAB BROADCASTERS SHOULD BE SUBJECT TO THE SAME INTERFERENCE RESOLUTION REQUIREMENTS AS ANALOG AM BROADCASTERS WITH NEW OR MODIFIED FACILITIES

Because the IBOC DAB signal of one station uses spectrum assigned to the analog signals of adjacent stations, the potential for interference to the analog reception of adjacent channel stations when a station begins AM IBOC DAB transmissions exists. The NRSC has concluded that this type of interference will have a limited impact inside the protected contours of AM stations.[9] However, because several commenters expressed concern regarding this potential for interference, the Commission should adopt an appropriate remedy.[10] CEA suggests that the Commission adopt an interference protection rule similar to that already in existence for new or modified AM broadcasting facilities.

Currently, when an AM station commences operations on a new or modified facility, it is required to resolve complaints of interference inside its blanketing contour (1 V/m) received within one year after the start of operations.[11] The station must resolve these complaints at no cost to the complainant. CEA recommends a similar remedy for AM IBOC interference problems.

CEA notes that the limited interference that may result from the commencement of AM IBOC DAB broadcasts, however, might not fit within the existing definition of "blanketing

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[9] *See* NRSC AM IBOC Report at 56-57.

[10] *See, e.g.,* Comments of Clear Channel Communications at 2-3 (proposing a reduction in power limits); Harry L. Helms at 1; Infinity Broadcasting Corp. at 7-8; Robert Meuser at 1; NAB at 3-6.

[11] *See* 47 C.F.R. §§ 73.88 and 73.318(b)-(d) (2001).

interference."[12] Accordingly, the Commission may wish to modify Sections 73.88 and 73.318 of the Rules to address this fact and provide a remedy for listeners who experience new interference inside the protected contour as a result of the commencement of AM IBOC DAB broadcasting. Should listeners inside the protected contour of an analog AM station experience interference as a result of another station commencing AM IBOC DAB transmissions, the radio station that initiated AM IBOC DAB transmissions should be required to take whatever steps necessary to resolve the problem.

As part of its resolution of this proceeding, the Commission will determine whether to require prior authorization for the commencement of AM IBOC DAB transmissions. If the Commission elects to permit broadcasters to initiate and terminate digital transmissions without prior authorization, it should take all steps necessary to ensure that broadcasters remain responsible for new interference that may occur as a result of IBOC transmissions. One way the Commission could ensure interference free analog broadcasts would be to require that AM IBOC DAB broadcasters correct any limited interference that their IBOC signals may cause to analog reception as long as the Commission's Rules provide for analog AM broadcasting.

IV. REVIEW OF ALL-DIGITAL AM IBOC DAB IS NEEDED BEFORE SPECIFIC TRANSMITTER POWER LEVELS CAN BE DEFINED.

CEA endorses the concept of all-digital AM (and FM) IBOC. However, before the Commission adopts any technical rules about transmitter power levels for an all-digital mode of operation, the industry should have adequate opportunity to study the interference and performance ramifications and make related recommendations. CEA, therefore, encourages the Commission to abstain from defining specific power transmittal levels at this time.

[12] Pursuant to Section 73.14 "blanketing" is the "interference which is caused by the presence of an AM broadcast signal of one volt per meter (V/m) or greater strengths in the area adjacent to the antenna of the transmitting station. The 1 V/m contour is referred to as the blanket contour and the area within this contour is referred to as the blanket area." *See* 47 C.F.R. § 74.14 (2001).

The Commission should wait until further IBOC DAB testing reports are submitted. For instance, test results on IBOC DAB utilizing Lucent's Proprietary Audio Coding ("PAC") and on AM IBOC DAB on AM nighttime ground wave propagation conditions have not yet been submitted for comment. When these reports are filed and analyzed, and when a sufficient transition period has elapsed, the Commission should seek expeditious industry comment on the expansion to all-digital DAB.

V. CONCERNS AND CRITICISMS REGARDING AM RADIO AND CONSUMER ELECTRONICS EQUIPMENT ARE UNFOUNDED.

Several commenters expressed concerns and criticisms related to AM consumer electronics equipment. Specifically, comments were made regarding the compatibility of AM IBOC with existing consumer electronics equipment,[13] and criticisms were made regarding the quality of existing AM radio receiver equipment.[14] These concerns and criticisms are unfounded.

CEA feels compelled to address the criticisms regarding current AM analog receiver equipment. Manufacturers have always catered to market forces and consumer demand in developing and manufacturing receiver equipment and functionalities. It is disingenuous, therefore, to claim that the shortfalls of analog AM broadcasting are due largely to consumer electronics equipment. If adequate consumer demand existed for more advanced AM technologies such as C-QUAM AM stereo and AMaX, such features/standards would be ubiquitously deployed in existing equipment. CEA believes that receiver design is a function of market forces and should remain that way.

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[13] *See, e.g.,* Comments of C. Crane Company at 1 (suggesting that reducing the broadcast bandwidth to 5 kHz will force every receiver to have this poor analog bandwidth and all manufacturers will be forced to install narrow bandwidth analog filters); Bob Carter at 1 (suggesting that all receivers will be forced to install narrow bandwidth analog filters to accommodate AM IBOC DAB); John Olson at 1; Laurence Waldbillig at 1; and V.J. Redding.

Further, the concerns expressed regarding the compatibility of analog and digital AM receivers are largely premature. Given the inherently hybrid analog/digital nature of the initial AM IBOC DAB implementation and the fact that analog is likely to be relied on as the exclusive transmission medium for nighttime use, existing analog AM equipment will continue to receive a heavy influx of broadcast signals. Indeed, one of the most attractive features of iBiquity's IBOC DAB is that analog and digital signals can coexist. Also because of the dual nature of IBOC DAB, the embedded base of analog radio receivers will not be rendered obsolete in the near future. Finally, it is likely that consumer demand will motivate manufacturers to produce backward compatible receivers with adequate analog AM reception. As long as there are analog AM broadcasts and consumer demand for those broadcasts, manufacturers will likely manufacture quality AM analog equipment.

Commenters' concerns regarding the anticipated obsolescence of analog receiver equipment should be fully addressed when (and if) the Commission considers a total transition to digital broadcasting. Consumer electronics manufacturers produce receivers based on existing and anticipated consumer expectations and demand. As DAB is deployed, consumer awareness and demand for digital receiver equipment will increase, thereby reducing the cost of quality integrated and/or digital only receiver equipment. The consumer electronics industry has and will continue to manufacture radio receiver equipment based on the demands of the market.

[14] *See, e.g.,* Comments of Michael J. Richard; J.S. Gilstrap, Jr.; and Russel Skadl.

VI. CONCLUSION

CEA concurs with the conclusions in the NRSC AM IBOC Report, and urges the Commission to act swiftly to adopt a single technical standard for AM IBOC technology. CEA further urges the Commission to address any limited interference that might occur when AM IBOC DAB is introduced. By taking these actions, CEA believes that the Commission will enable receiver manufacturers, broadcasters, and the general public to fully realize the benefits of improved radio service in the AM band.

Respectfully submitted,

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